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PTSD AND COMBAT-RELATED PSYCHIATRIC SYMPTOMS IN OLDER VETERANS

Paula P. Schnurr, PhD

During the past decade PTSD researchers have shown increased interest in men who fought in wars prior to Vietnam. This issue of the *PTSD Research Quarterly* reviews the literature on combat-related psychiatric symptoms in these men. The review reflects publication trends and is divided into two sections. One section contains sources published before the introduction of PTSD into the diagnostic nomenclature by the third edition of the American Psychiatric Association's *Diagnostic and Statistical Manual* in 1980. The other contains sources published after the formalization of PTSD as a diagnostic entity.

Publications before 1980. Most of the literature represented in this section was written during and immediately after World War II (WWII). The reader interested in World War I should refer to the bibliography by Brown and Williams (1918, 1976), an extensive collection (with abstracts) of the international literature on the psychiatric aspects of military service during the period.

Investigators who studied psychiatric casualties in WWII combat veterans variously labeled the constellation of symptoms they saw as "traumatic war neurosis" (Kardiner & Spiegel, 1947), "combat exhaustion" (Swank, 1949), and "operational fatigue" (Grinker et al., 1946, I, II). Whatever the label, it is clear that these investigators were seeing a condition much like what we now recognize as PTSD. For example, Kardiner and Spiegel described a chronic syndrome that included preoccupation with the traumatic stressor, nightmares, irritability, increased startle responsiveness, a tendency to angry outbursts, and general impairment of functioning.

Many investigators attempted to determine the etiology of the syndrome by asking veterans about their premilitary home life and adjustment as well as their experiences in combat. Grinker et al. (1946, I.) found that air crew officers with "operational fatigue" were more likely than combat controls to report premilitary anxieties and neurotic trends and to report having experienced more symptoms while in combat. Similar findings were seen in enlisted flying personnel (Grinker et al., 1946, II.). In addition, parental discord, broken homes, and parental alcoholism (factors not assessed in the officers) were more likely in the enlisted men with operational fatigue. Swank (1949) found some evidence of premilitary personality disturbance in his

study of over 2000 cases of "combat exhaustion," but also found that amount of combat exposure (e.g., unit casualty rate) predicted symptoms. He counseled against viewing cases of combat exhaustion as resulting entirely from either premilitary personality instability or combat stressors.

Follow-up studies of WWII veterans continued into the 1950s, when veterans of the Korean conflict were included as a comparison group in some investigations; they rarely have been studied on their own. A theme of chronicity began to emerge. Futterman and Pumpian-Mindlin (1951) reported a 10% prevalence of traumatic war neurosis in a series of 200 psychiatric patients in 1950. They noted as significant the fact that many of the men had not sought treatment even five years after the war. Brill and Beebe (1955) reported continuing impairment of functioning in a sample of almost 1500 veterans who had been discharged for "psychoneurosis" in WWII, almost half of whom were combat casualties. Archibald et al. (1962) found WWII combat veterans with "gross stress syndrome" to have severe problems such as increased startle, sleep disturbance, and avoidance of activities reminiscent of combat. A follow-up of these men (Archibald & Tuddenham, 1965) that included Korean conflict veterans showed the same symptom profile and relatively more symptoms than in noncombat psychiatric patients or in combat controls. The Archibald studies are notable for their use of the MMPI, which showed combat veterans to be elevated on the depression, hysteria, and hypochondriasis scales, and to differ from noncombat psychiatric patients on 47 items.

Dobbs and Wilson (1960) reported an interesting experiment that foreshadowed current laboratory studies on the psychophysiological correlates of PTSD. They exposed WWII veterans with combat-related psychiatric symptoms, healthy combat controls from WWII and the Korean conflict, and nonveterans to audiotapes of combat sounds. Combat controls showed greater pulse, respiration, and EEG responsiveness to the stimuli than did nonveterans. The combat-symptoms group was so unable to tolerate the sounds that physiological recordings could not be made. Dobbs and Wilson commented on the chronicity of combat fatigue and discussed its similarity to animal models of neurosis.

Few studies of WWII or Korean conflict veterans were performed in the 1970s, when articles about Vietnam veterans began to emerge. The exceptions seemed to focus on prisoners of war (POWs). For example, Klonoff et al. (1976) reported on the MMPI profiles of POWs, and Beebe (1975) reported on POWs' physical and mental health.



Most studies indicated that prisoners interned by the Japanese or Koreans were more symptomatic than those interned by the Germans.

Publications since 1980. After the formalization of PTSD as a diagnosis, isolated case studies began calling attention to the fact that some veterans of wars prior to Vietnam had PTSD. Van Dyke et al. (1985) reported on a WWII combat veteran who had been well-functioning until a medically necessary retirement at age 53, when he began to experience combat nightmares. Subsequent to further medical problems, the man developed PTSD.

A relative flurry of research activity on older combat veterans has occurred over the past several years. The prevalence of PTSD in this group is unknown because no study has used a sample representative of the larger population. The estimates of PTSD prevalence, which seem tragically high, have been derived from patient groups or POWs. However, as in Vietnam combat veterans, a significant number of older veterans have experienced PTSD. In patients hospitalized for medical illness, Blake et al. (1990; see *PTSD Research Quarterly*, 1(3)) found the prevalence of current PTSD in WWII and Korean conflict veterans who had never sought psychiatric treatment to be 9% and 7%, respectively. Among those who had previously sought psychiatric treatment, 37% of the WWII veterans and 80% of the Korean conflict veterans had current PTSD. Rosen et al. (1989; see *PTSD Research Quarterly*, 1(1)) found that 54% of a group of psychiatric patients who had been in combat during WWII met criteria for PTSD. The prevalence of current PTSD was 27%. Harel and Kahana (1989) observed a decline of similar magnitude from discharge to the present in reports of individual PTSD symptoms by veterans who survived the attack on Pearl Harbor.

Some findings suggest differences between older combat veterans and their younger counterparts. Blum et al. (1984) found that combat veterans of WWII and the Korean conflict were more satisfied than Vietnam combat veterans with treatment received from the VA. Davidson et al. (1990) reported that in veterans with current PTSD, those who served in WWII were less symptomatic than those who served in Vietnam. In the Davidson study, age of onset for PTSD was similar in both groups, but relatively more Vietnam veterans had a psychiatric diagnosis that predated their experiences in combat. Davidson and his colleagues (1987) also have found personality differences between WWII and Vietnam War veterans.

POWs have continued to receive the attention of researchers trying to understand the psychiatric sequelae of exposure to traumatic stressors. In a questionnaire study of over 400 POWs from WWII, Zeiss and Dickman (1989) found that 55% reported symptoms consistent with a diagnosis of PTSD. Kluznik et al. (1986) performed clinical interviews on POWs from WWII and found a lifetime prevalence of 67%. Speed and her colleagues (1989; see *PTSD Research Quarterly*, 1(1)) also used clinical interviews and found that 55% of a group of WWII POWs had a lifetime history of PTSD and 29% had current PTSD. Sutker et al. (1991) studied veterans of the Korean conflict and

found that POWs performed more poorly on cognitive tests and reported more physical, emotional, and behavioral problems, relative to combat controls. Eighty-six percent of the POWs and 9% of the controls had PTSD. The POWs also had elevated MMPI scores and differed significantly from controls on the F, depression, schizophrenia, and social introversion scales. An earlier study by Sutker et al. (1988) showed that POWs could be classified into two MMPI subtypes, one characterized by high scores on F, hypochondriasis, depression, hysteria, psychasthenia, and schizophrenia, and the other characterized by high scores on hypochondriasis, depression, and hysteria. Sperr et al. (1990) also found elevations of these three scales in a group of WWII and Korean conflict POWs. They noted that the typical profile is one of somatic concerns, mostly involving the autonomic nervous system.

Some investigators have studied special populations or special problems. Op den Velde and colleagues (in press; see *PTSD Research Quarterly*, 1(3)) found the lifetime and current prevalences of PTSD in WWII veterans of the Dutch Resistance to be 84% and 56%, respectively. Op den Velde et al. (1990) speculated that social neglect of this group, coupled with the fact that most never received psychiatric treatment, may have contributed to the chronic nature of their symptoms. Unlike previous investigators, Elder and Clipp (1989) looked at both negative and positive effects of combat exposure in older veterans. They found that men with heavy exposure reported more negative effects than less-exposed veterans, but also some positive effects as well. Rosenheck (1986) studied the adult children of five WWII veterans with PTSD. He found that reactions to the fathers' symptoms varied both within and between families, adversely affecting the children in some cases.

Conclusions. One gets a sense of *déjà vu* when reading the older sources. The authors seem highly insightful, because the questions asked (and many of the answers) are startlingly similar to those in more contemporary materials. However, it is important to note that none of these studies were as diagnostically pure as more current investigations, and few used instruments that we now consider necessary for assessing PTSD.

A significant limitation of the current literature is the absence of information about the assessment and treatment of PTSD in older veterans. Another limitation is the absence of longitudinal studies. The exception to this rule (Elder & Clipp, 1988, 1989), as well as attempts to document developmental trends retrospectively, suggest that interesting changes may occur over the life span in conjunction with normal aging processes. An additional limitation is the absence of information about women and minorities. Research on Vietnam veterans has shown that it is important to consider gender and ethnicity when studying PTSD.

Taken together, the findings reviewed above are troubling: PTSD currently exists in many veterans decades after their exposure to combat. Whether this remarkable chronicity is the true course of the disorder or only the consequence of a failure to recognize and treat the disorder

SELECTED ABSTRACTS

ARCHIBALD, H.C., LONG, D.M., MILLER, C. & TUDDENHAM, R.D. (1962). **Gross stress reaction in combat — a 15-year follow-up.** *American Journal of Psychiatry*, 119, 317-322. To investigate both the persistence and characteristics of the combat syndrome, questionnaires concerning health, adjustment, and service experience were sent to 65 veterans who experienced symptoms after an average time of 15 years. A control of 70 non-combat veterans who are or had been psychiatric patients was also studied. Fifty seven combat patients and 48 non-combat patients returned the questionnaires. In addition, a small group (15) of combat veterans without service connection and who had never requested treatment were also given the questionnaire. The combat veterans generally showed more pathology on both the questionnaires and MMPI than did the controls. Symptoms highly specific to the combat syndrome were reported far more often by the combat group, e.g., combat dreams and startle reactions. While there were similarities between the combat patients and the non-combat controls, a clear-cut picture emerged of the combat veteran syndrome as a severely disabling condition involving startle reactions, sleep difficulties, dizziness, blackouts, avoidance of activities similar to combat experience, and internalization of feelings. In marked contrast, the small group of combat veterans who had never been psychiatrically ill reported very few symptoms. A new therapeutic technique is being instigated in a group of men with the combat syndrome. We deliberately recreate a "band of brothers" and foster the abreaction they hitherto assiduously avoided. [Adapted from Text]

BLUM, M.D., KELLY, E.M., MEYER, M., CARLSON, C.R. & HODSON, W.L. (1984). **An assessment of the treatment needs of Vietnam-era veterans.** *Hospital and Community Psychiatry*, 35, 691-696. A needs assessment was conducted to determine the existence and extent of differences between Vietnam-era veterans and other veterans residing within the catchment area of the Northport Veterans Administration Medical Center. The results of a questionnaire completed by 486 veterans indicated that, compared with World War II and Korean War veterans, a greater percentage of Vietnam-era veterans reported experiencing the symptoms of PTSD. They also reported more situational adjustment problems. A great number of Vietnam-era veterans expressed a need for psychotherapy and anger-control therapy, and they generally preferred to be treated with other Vietnam-era veterans who have had similar combat experience.

BRILL, N.Q. & BEEBE, G.W. (1955). **A follow-up study of war neuroses.** Washington, DC: Veterans Administration. This is a report on a study conducted by the National Research Council to provide information to the Armed Forces and the Veterans Administration about the course of psychoneurotic disorders. Almost 1500 Army and Navy veterans of World War II who had experienced a psychoneurotic breakdown in the military were selected for the study, which included record review for all and psychiatric interview for two-thirds. Non-psychiatric controls from World War II and the Korean conflict also were included. A comprehensive set of analyses focused on premilitary and family history and personality, stressors during military and civilian life, and postmilitary outcomes. Psychoneurotic cases, 45% of

whom experienced breakdowns in combat or following combat, had poorer premilitary adjustment and more disrupted childhoods. They also had experienced more military stressors and exposure to combat. Amount of combat exposure was only weakly related to follow-up status, but combat experience itself predicted a poorer outcome at follow-up in all men except those with premilitary normal personality. Sample cases are provided. [PPS]

DAVIDSON, J.R.T., KUDLER, H.S., SAUNDERS, W.B. & SMITH, R.D. (1990). **Symptom and comorbidity patterns in World War II and Vietnam veterans with posttraumatic stress disorder.** *Comprehensive Psychiatry*, 31, 162-170. Forty-four veterans with PTSD from World War II and Vietnam were compared. The groups were comparable on many socioeconomic and combat measures and age at onset of PTSD. Vietnam veterans exhibited more severe PTSD symptoms, higher Hamilton depression scores, and higher scores on the hostility, psychoticism, and "additional symptom" Symptom Checklist-90 (SCL-90) scales. They also had more survivor guilt, impairment of work and response, derealization, and suicidal tendencies. Differences were noted between the groups as to the nature of upsetting experiences. Vietnam veterans had a greater lifetime frequency of panic disorder and an earlier age of onset for alcoholism. In other respects, the two groups were diagnostically similar, with PTSD being related to the sequential emergence of psychiatric diagnoses in similar manner for World War II and Vietnam patients.

ELDER, G.H. & CLIPP, E.C. (1989). **Combat experience and emotional health: Impairment and resilience in later life.** *Journal of Personality*, 57, 311-341. War's influence on emotional health includes potential psychological gains as well as losses. In a sample of 149 veterans from longitudinal samples at the Institute of Human Development, University of California, Berkeley, this study explores two questions on the legacy of combat in World War II and the Korean conflict. The first concerns the subjective experience or meanings of combat that veterans hold in later life, with particular attention to how such accounts are linked to the severity of combat and postwar adaptations. The second question links these accounts to the psychosocial functioning of veterans before the war and in later life using reports from veterans and their spouses and Q-sort ratings in adolescence and at age 40. Findings center on veterans of heavy combat. Compared to the noncombatants and light combat veterans, these men were at greater risk of emotional and behavioral problems in the postwar years. In mid-life, they hold mixed memories of painful losses and life benefits associated with military experience. Clinical ratings show that heavy combat veterans became more resilient and less helpless over time when compared to other men. As in the case of life events generally, short- and long-term effects may impair and enhance personal growth.

FUTTERMAN, S. & PUMPIAN-MINDLIN, E. (1951). **Traumatic war neuroses five years later.** *American Journal of Psychiatry*, 108, 401-408. This paper presents a summary of our experiences with a large group of cases of traumatic war neurosis during the 5-year period since the end of the war. We have made certain observations that have been hitherto unreported and that

we feel have both theoretical and practical therapeutic significance. Traumatic war neuroses occur in non-combatant military personnel located in a combat area with a relatively high degree of frequency. Guilt about killing or assailing defenseless enemy personnel, either military or civilian, is an important factor in the precipitation of a traumatic war neurosis. Traumatic war neurosis can and does occur in conjunction with physical injury. An overidealization of the pretraumatic history occurs in cases of traumatic war neurosis. The monotonous repetition of the traumatic war experiences and combat dreams in cases of traumatic war neurosis is caused by the transformation of the world into a threatening place. In our experience, the use of intravenous narcosis or hypnosis has not been particularly helpful in cases of chronic traumatic war neurosis. We have differentiated 2 character groups among our cases of traumatic war neurosis, according to their pretraumatic adjustment. We have characterized them as alloplastic and autoplatic, or outgoing and inhibited. We feel that this differentiation is important particularly from a practical therapeutic point of view. [Adapted from Author Summary]

HAREL, Z. & KAHANA, B. (1989). **The Day of Infamy: The legacy of Pearl Harbor.** In J.P. Wilson (Ed.), *Trauma, Transformation, and Healing* (pp.129-156). New York: Brunner/Mazel. The participants in this study were all survivors of the Pearl Harbor attack, 86% of whom went on to fight in the South Pacific theater of war. Sixty-five percent of the veterans reported symptoms of war-related intrusive imagery in 1986, specifically in the context of the Pearl Harbor attack. Further, 42% of the men reported survivor guilt and residual anger at the Japanese. Nearly one-fourth of the sample stated that they still have startle response to certain stimuli (engine noises) and one-third that it is still difficult to express feelings about what happened at Pearl Harbor. These findings lend strong support to our hypothesis of *context-specific* PTSD, which states that when a trauma occurs in a psychohistorical context, especially one that is profound, heroic, and changes the course of history, the survivors will report symptoms of PTSD more freely than when this is not the situation. On the average, the subjects reported 28% more symptoms of PTSD in the context of the Pearl Harbor attack than they did for the same symptom clusters on the generic measure of the stress syndrome. Furthermore, the results of the regression analyses indicated that the war stress measures were the most powerful predictors of our measures of PTSD symptoms in 1986. Men who had high levels of combat exposure, including receiving medical treatment for war injuries, were more likely to report PTSD symptoms, especially if they had an external locus of control. These results clearly point to the complex interaction effects between a personality dimension and war trauma in the development of symptoms that have persisted for 45 years. [Adapted from Author Summary]

KARDINER, A. & SPIEGEL, H. (1947). **War stress and neurotic illness.** New York: Paul B. Hoeber. The first edition of this book claimed to be "a guide to the study, treatment and postwar care of those neurotic disturbances which are incidental to war." Originally written based on cases of traumatic neurosis from World War I veterans, it was rewritten and updated with information gathered from veterans of World War II. It contains thorough clinical descriptions and treatment recommendations for both acute and chronic reactions to combat stress. The material on acute reactions includes a discussion of the combat environment and battlefield psychiatry as derived from the experiences of the second author during World War II. Additional chapters focus on psychodynamic and forensic issues. [PPS]

KLUZNIK, J.C., SPEED, N., VAN VALKENBURG, C. & MAGRAW, R. (1986). **Forty-year follow-up of United States prisoners of war.** *American Journal of Psychiatry*, 143, 1443-1446. The authors performed structured psychiatric examinations of 188 former prisoners of war (POWs). Sixty-seven percent had PTSD. Of those affected, 29% had fully recovered, 39% still reported mild symptoms, 24% had improved but had moderate residual symptoms, and 8% had had no recovery or had deteriorated. Presence of PTSD was not significantly correlated with other mental disorders. Delayed onset was not seen. The findings confirm the DSM-III concept of and criteria for PTSD.

OP DEN VELDE, W., FALGER, P.R.J., DE GROEN, J.H.M., VAN DUIJN, H., HOVENS, J.E., MEIJER, P., SOONS, M. & SCHOUTEN, E.G.W. (1990). **Current psychiatric complaints of Dutch Resistance veterans from World War II: A feasibility study.** *Journal of Traumatic Stress*, 3, 351-358. As a first step in a nation-wide study about psychiatric complaints in Dutch Resistance veterans, a feasibility study was conducted to test the instruments. The complaints of eight war victims, aged 61 to 73, were analyzed by means of questionnaires, a psychiatric survey, and a life history interview. All subjects met the DSM-III-R criteria for PTSD, with symptoms ranging from mild to very severe. The occurrence of manifest PTSD differed considerably over the years. Highly prevalent complaints included sleep disturbances, anxiety, and vital exhaustion. An increase in psychiatric complaints was often positively associated with the occurrence of stressful life events.

ROSENHECK, R. (1986). **Impact of posttraumatic stress disorder of World War II on the next generation.** *Journal of Nervous and Mental Disease*, 174, 319-327. A clinical survey examined the experiences of children who grew up in families in which a father suffered from posttraumatic stress disorder as a result of combat experience in World War II. Although the data did not permit rigorous epidemiological or definitive etiological conclusions, the survey did reveal that some offspring of World War II combat veterans demonstrate long-term, transgenerational effects from their father's combat trauma. Although the children's conscious knowledge of the veteran's combat experience and the impact of the veteran on the affective life of his family and on his children varied among the 5 families studied, the continuing legacy of wartime trauma was apparent in the adult lives of many of these offspring.

SPERR, E.V., SPERR, S.J., CRAFT, R.B. & BOUDEWYNS, P.A. (1990). **MMPI profiles and post-traumatic symptomatology in former prisoners of war.** *Journal of Traumatic Stress*, 3, 369-378. Results of this study found that prisoners of war (POWs) tend to produce a basic 1, 2, 3 (Hs, D, Hy) configuration on the MMPI which has also been found in other studies. Significant differences were found for different subgroupings on specific scales, but the same basic, 1, 2, 3 configuration was maintained for all groups. Subjects were found to display considerable PTSD symptomatology as depicted by independent psychiatric interviews and performance on an Impact of Events Scale (IES). PTSD symptoms were also found to dissipate over time. Results are discussed in reference to the possible use of somatization as a means of handling stress and how the manifestation of PTSD in this population differs from that seen in Vietnam combat veterans suffering from PTSD.

SUTKER, P.B., ALLAIN, A.N. & MOTSINGER, P.A. (1988). **Minnesota Multiphasic Personality Inventory (MMPI)-derived psychopathology subtypes among former prisoners of war (POWs): Replication and extension.** *Journal of Psychopathology and Behavioral Assessment*, 10, 129-140. Psychopathology and symptom patterns identified among former prisoners of war (POWs) by Sutker, Winstead, Goist, Malow, and Allain (1986) were replicated in an independent sample of 51 former POWs with similar personal backgrounds and military experiences. Data collection instruments included the Minnesota Multiphasic Personality Inventory (MMPI), self-report measures of anxiety and depression, and a structured clinical interview including a POW Trauma Index. Two prototypic MMPI profile patterns were identified using modal profile analysis (Skinner & Lei, 1980). Both were highly similar in shape and elevation to those reported in the previous investigation. Multiprofile-multisample analysis produced prototypic profile patterns which were accurate representations of profiles identified in separate analyses of the derivation and replication samples ($r's \geq .96$). Representing unique constellations of clinical features, profile subtypes were associated differentially with confinement stress severity, postservice adjustment, and nature and extent of stress-induced symptomatology.

SUTKER, P.B., WINSTEAD, D.K., GALINA, Z.H. & ALLAIN, A.N. (1991). **Cognitive deficits and psychopathology among former prisoners of war and combat veterans of the Korean Conflict.** *American Journal of Psychiatry*, 148, 67-72. Objective: This study was conducted to describe the long-term psychological and psychiatric sequelae of prisoners of war (POW) confinement against the backdrop of psychiatric evaluations of Korean conflict repatriates more than 35 years ago. Method: A group of 22 POWs and a group of 22 combat veteran survivors of the

Korean conflict were compared on measures of problem solving, personality characteristics, mood states, and psychiatric clinical diagnoses by means of a battery of psychometric instruments and structured clinical interviews. Results: Although the two groups were similar in background and personal characteristics, they differed in reports of life adjustment problems, complaints of physical distress, proficiency on cognitive tests, objectively measured personality characteristics, and assigned psychiatric diagnoses. Conclusions: Illustrated by a case report which describes the prolonged brutality of the Korean conflict POW experience for one individual, the results suggest that the psychiatric symptoms documented more than three decades ago have persisted in severity and chronicity. In addition to problems with cognitive deficits and complaints of bodily discomfort, most common among POW survivors were symptoms of suspiciousness, apprehension, confusion, isolation, detachment, and hostility.

ZEISS, R.A. & DICKMAN, H.R. (1989). **PTSD 40 years later: Incidence and person-situation correlates in former POWs.** *Journal of Clinical Psychology*, 45, 80-87. A statewide sample of WWII ex-POWs ($N = 442$) responded to questionnaires that sampled current and past difficulties with PTSD-related symptoms; an incidence of serious difficulties with these symptoms of 56% was revealed. Retrospective reports of temporal patterns revealed no consistent patterns of symptom occurrence, but, rather, a waxing and waning of difficulties over the 40-year period. Unexpectedly, measures of severity of the POW experiences did not predict current symptomatology. Rank at time of capture, however, was consistently and strongly predictive of PTSD. It is suggested that PTSD is a highly persistent phenomenon and that both situation and person variables contribute to the development and maintenance of PTSD.

ADDITIONAL CITATIONS Annotated by the Editors

ARCHIBALD, H.C. & TUDDENHAM, R.D. (1965). **Persistent stress reaction after combat: A 20-year follow-up.** *Archives of General Psychiatry*, 12, 475-481.

Added Korean conflict veterans to a follow-up of World War II veterans first studied by Archibald et al. (1962; see above). Relative to noncombat veterans with a psychiatric disorder or healthy combat controls, combat fatigue patients reported more of such symptoms as combat dreams, irritability, depression, jumpiness, and fatigue. MMPI clinical scores did not differentiate the combat fatigue group from a sample of 100 additional psychiatric patients, but the groups differed on 47 individual items. The authors comment on the chronicity of combat fatigue and suggest that aging can exacerbate the disorder.

BEEBE, G.W. (1975). **Follow-up studies of World War II and Korean War prisoners: II. Morbidity, disability and maladjustments.** *American Journal of Epidemiology*, 101, 400-422.

Reports on a follow-up of 2500 World War II and Korean conflict POWs and 2500 era-controls. Both somatic and psychiatric symptoms were observed in all POWs, relative to controls, but were most severe in those interned in the Pacific theater during World War II or in the Korean conflict. The latter two groups also had higher hospital admission rates and more VA disability awards.

BLACK, J.L. & KEANE, T.M. (1982). **Implosive therapy in**

the treatment of combat related fears in a World War II veteran. *Journal of Behavior Therapy and Experimental Psychiatry*, 13, 163-165.

Used implosive therapy to treat a 55-year-old veteran with psychiatric problems since combat in WWII who presented with agoraphobia, anxiety, fear of driving away from home, alcohol abuse, and marital problems. Improvement was observed in all areas except his marital relationship during 24 months of observation following treatment. The authors note similar improvements had not occurred in response to more conventional therapies.

BROWN, M.W. & WILLIAMS, F.E. (1918, 1976).

Neuropsychiatry and the war: A bibliography with abstracts. New York: Arno Press.

Contains an extensive bibliography and abstracts of the North American, European, Russian, and Australian literature on military psychiatry from the World War I era. A current edition was reprinted in 1976 by Arno Press.

COHEN, M.E., WHITE, P.D. & JOHNSON, R.E. (1948).

Neurocirculatory asthenia, anxiety neurosis or the effort syndrome. *Archives of Internal Medicine*, 81, 260-281.

Conducted studies on neurocirculatory asthenia in World War II

veterans: 144 psychiatric patients with the disorder, 23 medical patient controls, and 105 healthy controls. Psychiatric patients reported more psychiatric and somatic symptoms than controls and were more likely to have a first-degree relative with neurocirculatory asthenia. Patients appeared normal on routine clinical laboratory tests, but had higher basal pulse and respiration rates and were much less able than controls to perform muscular work. The authors dismiss the role of combat exposure in neurocirculatory asthenia because patients and controls reported similar military experiences.

DAVIDSON, J., KUDLER, H. & SMITH, R. (1987). **Personality in chronic post-traumatic stress disorder: A study of the Eysenck Inventory.** *Journal of Anxiety Disorders*, 1, 295-300.

Administered the Eysenck Personality Inventory to 30 PTSD veterans of WWII and the Korean conflict. These men had higher neuroticism and lower extroversion scores than either patients with major depression or nonpsychiatric combat and noncombat veteran controls. The PTSD group also had lower extroversion scores than a group of Vietnam veterans with PTSD, from whom they did not differ on the neuroticism scale.

DOBBS, D. & WILSON, W.P. (1960). **Observations on persistence of war neurosis.** *Diseases of the Nervous System*, 21, 686-691.

Observed psychophysiological responses to combat sounds in 8 World War II veterans with combat-related psychiatric symptoms, 13 healthy combat controls from World War II and the Korean conflict, and 10 nonveteran controls. Healthy combat veterans were more responsive than nonveterans. Extreme behavioral responses of the psychiatric group prevented recording. The authors discuss their findings in terms of learning theory and note the similarity of war neurosis to experimentally induced neuroses in animals.

ELDER, G.H. & CLIPP, E.C. (1988). **Wartime losses and social bonding: Influences across 40 years in men's lives.** *Psychiatry*, 51, 177-197.

Used a longitudinal data archive to study the effects of combat experience on social and psychological functioning in a group of WWII and Korean conflict veterans. Men with heavy combat exposure were more likely than less-exposed men to maintain friendships made in the military. Combat trauma, especially the loss of comrades and friends, was important in predicting post-war social ties.

GOLDSTEIN, G., VANKAMMEN, W., SHELLY, C., MILLER, D.J. & VAN KAMMEN, D.P. (1987). **Survivors of imprisonment in the Pacific theater during World War II.** *American Journal of Psychiatry*, 144, 1210-1213.

Interviewed 41 POWs interned by the Japanese in WWII. Half met criteria for PTSD, although all were community-residency volunteers and few had ever sought psychiatric treatment. MPI scale T-scores were elevated for hypochondriasis, depression, hysteria, and schizophrenia. The most frequently reported symptoms were sleep disturbance, recurrent dreams of their POW experiences, and intrusive recollections.

GRINKER, R.R., WILLERMAN, B., BRADLEY, A.D. & FASTOVSKY, A. (1946). **A study of psychological predisposition to the development of operational fatigue: I. In officer flying personnel.** *American Journal of Orthopsychiatry*, 16, 191-206.

Administered a questionnaire about premilitary personality, military experiences, and postmilitary symptoms to 284 air crew officers who were patients with operational fatigue and 260 healthy combat controls from World War II. Patients reported more premilitary personality problems, symptomatic reactions to combat, and more current symptoms, including tension, irritability, startle, and sleep difficulties.

GRINKER, R.R., WILLERMAN, B., BRADLEY, A.D. & FASTOVSKY, A. (1946). **A study of psychological predisposition to the development of operational fatigue: II. In enlisted flying personnel.** *American Journal of Orthopsychiatry*, 16, 207-214.

Administered a structured interview to 369 enlisted flying personnel from World War II, 198 who were patients with operational fatigue and 171 healthy combat controls. Patients were more likely than controls to report disturbed childhoods and premilitary neurotic behaviors. Patients also reported more difficulties while in the military and more symptoms upon their return.

KLONOFF, H., CLARK, C., HORGAN, J., KRAMER, P. & MCDUGALL, G. (1976). **The MMPI profile of prisoners of war.** *Journal of Clinical Psychology*, 32, 623-627.

Compared the MMPI profiles of Canadian POWs who were interned in either Japan or Europe during World War II. Both groups had T-scores above 70 on hypochondriasis and depression. The Japanese group was higher than the European group on 8 of the 10 scales, but differed significantly only on hypochondriasis. Overall fewer than 40% of the profiles could be considered diagnostically normal.

QUERY, W.T., MEGHAN, J. & MCDONALD, G. (1986). **Applying posttraumatic stress disorder MMPI subscale to World War II POW veterans.** *Journal of Clinical Psychology*, 42, 315-317.

Administered the MMPI to 69 male POWs of WWII and found that the 18 men with PTSD had higher scores on the PTSD subscale than the 51 who did not have PTSD. Using a cut-off score of 17, the authors were able to correctly classify 67% and 88% of the PTSD and no-PTSD groups. They suggest caution in using this cut-off until it is validated in a replication study.

SWANK, R.L. (1949). **Combat exhaustion: A descriptive and statistical analysis of causes, symptoms and signs.** *Journal of Nervous and Mental Disease*, 109, 475-508.

Reviewed over 2000 cases of combat exhaustion in World War II. Premilitary neurotic tendencies predicted shorter time to breakdown in combat, but breakdown also was positively associated with unit casualty rates. Psychiatric symptoms after breakdown were generally similar in those with and without premilitary neurotic tendencies. The author emphasizes that viewing combat exhaustion as either entirely the result of precombat neuroses or of combat exposure is incorrect.

VAN DYKE, C., ZILBERG, N.J. & MCKINNON, J.A. (1985). **Posttraumatic stress disorder: A thirty-year delay in a World War II veteran.** *American Journal of Psychiatry*, 142, 1070-1073.

Interviewed a male combat veteran of WWII who began having war-related nightmares at age 53 after retiring for medical reasons. By age 61, the man met criteria for PTSD. The authors discuss potential factors underlying the emergence of symptoms after such a long delay and consider alternative explanations.

PILOTS UPDATE

We have been testing the PILOTS database and our indexing vocabulary by performing experimental searches of the body of records entered so far. We have run 45 such searches, on a wide range of topics. Examples of successful searches include:

- biochemical studies of hostages
- use of alprazolam in treatment of veterans with PTSD
- causes of mortality among Vietnam War veterans
- suicide and incarceration among Vietnam War veterans
- support groups for wives of Vietnam War veterans
- clinical treatment of adult female survivors of childhood physical or sexual abuse
- PTSD among earthquake survivors
- child and adolescent refugees
- hypnotizability in PTSD
- studies on PTSD using the Stroop Test
- effects of traumatization of children by family violence
- PTSD and coronary disease
- measures taken by military psychiatrists during the Vietnam War to prevent PTSD
- dissociative disorders among incest survivors
- PTSD among crime survivors
- psychodrama with PTSD patients
- PTSD as a result of terrorist activity
- psychic numbing and PTSD

In almost every case, our indexing vocabulary has contained one or more terms applicable to the search request; and in those cases where an appropriate term was not found in the PTSD Thesaurus we were able to find the desired material through a free-text search of the database. ("Free-text searching" looks for words in the title or abstract of a document. This provides a way of finding terms too specialized, too idiosyncratic, or too recent to be included in the indexing vocabulary.)

As one of the above examples suggests, one unusual feature of PILOTS is the ability to search for papers in which a particular test or assessment instrument was used. This can be used by the clinician or researcher contemplating the use of a questionnaire or rating scale to determine how well it has performed in past studies and how suitable it might be for the work at hand.

This is one example—the specialized indexing vocabulary contained in the PTSD Thesaurus is another—of the advantages of using PILOTS to search the literature of post-traumatic stress disorder. By the end of April our readers will be able to see for themselves, as the PILOTS database becomes available for online interactive searching as the PTSD subfile of the Combined Health Information Database (file "CHID") on the BRS Search Service.

As our feature article demonstrates, there are valuable studies of PTSD to be found in the older literature. We plan to include old as well as new publications in the PILOTS database. In order to do this we need to obtain copies for our PTSD Resource Center. This will not be easy.

We can get copies of journal articles from research libraries, but there are many publications that will be much harder to obtain. Newsletters and house organs are only sporadically available in library collections. Technical reports, Congressional hearings, and materials produced by victim assistance groups and veterans' organizations are often difficult to locate and nearly impossible to obtain. And published books, once out of print, are hard to come by. While it is possible to find these materials on the antiquarian book market, it is a chancy process, and often an expensive one. Before resorting to this process, we would like to appeal to our readers for their help.

We would happily receive as donations to our PTSD Resource Center any out-of-print publications on PTSD, including its earlier manifestations as shell shock, psychoneurosis, and war trauma. We would also like to receive new publications, especially those appearing from publishers outside the mainstream of American trade and scholarly book publishing.

Our first purpose in assembling the PTSD Resource Center is to serve the PILOTS database and other bibliographical projects. As an inevitable result, we shall soon have one of the world's largest collections of the PTSD literature. We are studying ways in which we can make this collection available to PTSD workers outside our own organization. There are many problems to be resolved. If the Resource Center is to serve an archival function for the PTSD field and support our bibliographical work, it would not be practical to lend materials for outside use. The supply of copies raises issues of staff and budget constraints as well as copyright law compliance. On-site use of our resources would not be practical for those distant from White River Junction (a category that includes almost all of our readership!). But before we think about solutions to these problems, it would be useful to get some sense of the informational needs of potential users. Thus we would like to hear from readers about their experiences and their suggestions.

This is Volume 2, Number 1 of the *PTSD Research Quarterly*, the Winter 1991 issue. Three issues (Spring, Summer, and Fall) were published in 1990; there was no Volume 1, Number 4. Future issues will be published quarterly, with four issues (Winter, Spring, Summer, Fall) to each annual volume. Each issue will be mailed toward the end of the quarter.

PTSD RESEARCH AT THE DURHAM VA MEDICAL CENTER

Harold Kudler, MD

The Durham VAMC serves the Piedmont of North Carolina and is a major teaching affiliate of Duke University Medical Center. Local interest in PTSD dates back to the mid-1970's when reports by Jesse Cavenar, MD, John Walker, MD, and Jim Nash, MD, focused attention on the problems of Vietnam veterans. Jonathan Davidson, MD, joined the staff in 1982. His interest in monoamine oxidase inhibiting antidepressants led to a study of phenelzine treatment for PTSD. Jonathan also designed a family study of PTSD that raised important questions about the relationship between PTSD and major depression.

When I joined Jonathan in 1984, we began to map out a strategy for the systematic study of PTSD. Along with Becky Smith, RN, we integrated our questions for each DSM-III criterion into a Structured Clinical Interview for PTSD (SI-PTSD) with anchored rating points to gauge each symptom's presence and severity. The SI-PTSD made it possible for us to report on the validity and reliability of the DSM-III criteria for PTSD and continues to serve well in our research. Also, Drs. Roy Stein and Lou Crume helped us develop a flashback interview. Currently Roy is developing a Substance Abuse Program here, and we look forward to collaboration on dual diagnosis patients.

Our examination of the neuroendocrinology of PTSD began with a look at platelet MAO activity in PTSD patients. We later found that most PTSD patients were suppressors on the dexamethasone suppression test as long as they did not suffer from a concurrent endogenous depression. This finding inspired a look at CRH in PTSD that was spearheaded by Mark Smith, MD. We observed that PTSD patients, like depressives, have blunted responses to CRH. We also noted a positive correlation between basal cortisol and score on the SI-PTSD. In a study with Dr. Merton Sandler of the University of London, we found no difference between PTSD subjects and controls in tribulin levels. We did find that levels of both inhibitory activities were higher in agitated PTSD subjects and lower in extroverts than in introverts.

Other research efforts are spread across a variety of topics. A VA Merit Review grant funded a double-blind study of amitriptyline in PTSD that helped establish the efficacy and the limits of tricyclic treatment. Another member of our staff, Steven Lipper, MD, PhD, has reported carbamazepine to be effective in selectively ameliorating the intrusive/re-experiencing symptoms of PTSD, a finding consistent with his proposed kindling model. Our growing pool of PTSD subjects has allowed us to compare symptom and comorbidity patterns in World War II and Vietnam veterans. We also have reported on the Eysenck Personality Inventory in PTSD and collaborated with Loretta Braxton, PhD, and Ed Hamlin, PhD, of Psychology on studies of personality using the Millon Clinical Multiaxial Inventory.

Durham's Psychology Service is led by Bob Shipley,

PhD, who has made important contributions to exposure therapy in PTSD. Another senior investigator is Elizabeth Clipp, RN, PhD, of the Durham VA GRECC. She uses secondary data analysis to examine the long-term effects of military service, especially combat, on health and patterns of aging in older male veterans, predominantly of the Korean conflict and World War II. Along with Professor Glen Elder of the University of North Carolina at Chapel Hill, she recently received the Richard Kalish Innovative Publication Award from the Gerontological Society.

Jonathan left the VA in 1987 to head the Division of Outpatient Psychiatry at Duke and develop their Anxiety Disorders Program. Becky followed him and Lynelle Erickson joined as research assistant at the VA. We continue to work as a team. Currently, I have my hands full helping Duke and the VAMC prepare for any casualties from Operation Desert Storm.

Our staff has tackled the problem of PTSD in the clinic and the laboratory from metapsychology to epidemiology. Although recent events remind us that there is still a great deal to learn, we are pleased to have helped establish a strong foundation for future research.

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